



Lincoln Community Energy Conversation 2012

A Study of Resident Views Regarding Local Energy
Programs in Lincoln, Nebraska

DRAFT REPORT
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EXECUTIVE SUMMARY

The purpose of the Lincoln Community Energy Conversation was to start a community discussion about the future of Lincoln's energy supplies. As Lincoln grows, energy demands will increase, making it important to discuss means for ensuring sustainable and affordable energy for residents in the future.

The Lincoln Community Energy Conversation consisted of two parts: An online survey completed by more than 400 Lincoln residents, and a morning-long, face-to-face discussion among more than 40 residents as well as city officials and a panel of energy experts including representatives from Lincoln Electric System, Black Hills Energy, the University of Nebraska-Lincoln, and HDR architecture. The survey was used to gather initial impressions and questions from the community, and the face-to-face discussion was used to delve deeper into community values and concerns.

The following are the Key Findings from the 2012 Energy conversation:

Pertaining to preferred energy programs:

- All programs were perceived as important. However, survey and conversation participants felt that it was most important to invest in programs directed at upgrading city assets and encouraging private sector efficiency.
- Though still rated as important (above 3.5 on the 1 to 5 scale), the programs least important to participants were those aimed at providing assistance to low-income persons and provision of low-interest loans.
- Examination of explanations for these preferences suggested that residents felt that:
 - The city's role was to conserve energy, potentially save tax dollars, and set an example for others.
 - The private sector uses more energy and can more easily be regulated than private residents.
 - Loans (which were already low-interest), incentives, and low-income assistance would have impacts, but perhaps smaller impacts on energy use compared to other programs.

Relating to policy objectives:

- All of the listed objectives were viewed as important; however, participants were most in favor of reducing dependence on foreign oil and curbing of greenhouse gases.
- Participants felt it was also important to keep electricity bills low and to help low-income families (average importance ratings were above 3.5 on the 1 to 5 scale), but these objectives were rated the lowest of the five objectives.

- While saving taxpayers money was rated as the middlemost important priority, conversation participants felt it was less important after discussing it with others during the morning-long community conversation. On the other hand, their perceptions of the importance of keeping electricity bills low increased in importance.
- The beliefs that appeared to underlie policy preferences included:
 - Beliefs about likely causes of energy-related problems and likely consequences of different policies. For example, belief in the importance of reducing greenhouse gases during energy production led to preferences for the objective to reduce such gases.
 - Beliefs about the role of government in different policies, and different beliefs about which objectives are most achievable and effective.

Finally, when it came to funding energy programs:

- Most of the survey respondents and community conversation participants were willing to pay more than the estimated amount needed per household per month to continue current energy programming or support new programs.
- Other suggested sources of funding for such programs included charges associated with energy rates (e.g., increases in costs of electricity), voluntary support and donations provided by concerned individuals, and self-sustained funding (using the savings from energy improvements to pay for the energy programs).

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First, we thank Nidhi Khanna of HDR Architecture, Chris Ford of the UNL College of Architecture, Marc Shkolnick of Lincoln Electric System, and Greg Shinaut of Black Hills Energy for serving on our expert panel and answering community questions, and Milo Mumgaard for moderating the panel. Additional thanks go to Milo Mumgaard, Lee Gutkind, and Michael Hayes, for providing input on the background materials; Bill Luxford and the staff of 5 City-TV for taping and producing part of the community conversation events for broadcast on Channel 5; and the Pesticide Education Office of the Agronomy and Horticulture Department (pested.unl.edu) for providing use of their real-time voting system.

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We express our deep gratitude to the many individuals who volunteered their efforts to ensure the community conversation was a success by managing the event and moderating discussions: **JANELL CAN YOU LIST?**, and the members of the city Staff who helped plan and set up the event.

As always, the most important thanks, however, go to the 400+ residents of Lincoln, Nebraska who took their time and put forth their effort to think through the difficult energy choices facing the city. Their willingness to learn more about the city's energy programs, and to give both their recommendations and reasons for how the city should handle future energy challenges, are key to keeping democracy alive and Lincoln thriving.

BACKGROUND AND PROCEDURES OVERVIEW

The Lincoln Community Energy Conversation was designed to support the development of the energy portion of the Sustainable Lincoln Plan, a comprehensive agenda for improving the city's environmental impact. Through an online survey and a face-to-face conversation between community members and energy experts, participants were invited to give their views on energy efficiency programs at the state and local level. This report presents the key findings from these public engagement activities.

This community conversation was patterned after the success of the Taking Charge initiative, a cooperative effort between the city of Lincoln and the University of Nebraska Public Policy Center to involve public input in the city budget process. Since 2008, several thousand Lincoln residents have participated in the Taking Charge process, which provides opportunities for residents to voice their opinions through both surveys (paper, online, randomized and free access) and face-to-face meetings with public officials. The Lincoln Community Energy Conversation likewise used an online survey and face-to-face event to seek public input. The conversation and surveys focused on broad values rather than specific programs, as participants were asked to consider the objectives that should motivate future energy policy at the city level. The results should be of interest to many local stakeholders, as relevant energy efficiency programs are currently being administered by the Nebraska Energy Office, Lincoln Electric System, Cleaner Greener Lincoln and others.

♦ RECRUITMENT METHODS

The online survey was open from June 23 to September 7, 2012 and was available via a link on the front page of the city's and Public Policy Center's websites. In addition, press releases and media publicity directed residents to the city website linking to the survey (Lincoln Journal Star, 2012). Invitations also were sent directly to groups believed to have a particular interest in energy policy, including participants in the Lincoln Energy Challenge and members of the Lincoln Chamber of Commerce. The online survey was accessed 812 times, and 465 individuals completed some portion of the survey, with no more than 427 persons answering any given one of the primary questions on the survey.

During the online survey, participants were also invited to join a face-to-face community conversation on August 18, 2012. A total of 106 people indicated an interest in participating in the face-to-face event. Those expressing interest were sent e-mail reminders prior to the event to provide them with information and to encourage them to attend. Ultimately, 44 people participated in the August 18th event and 43 persons completed the survey materials at the event.

Table 1: Demographic Characteristics

	Online Survey		Community Conversation RSVPs		Community Conversation Attendees	
Total Population	N = 461	%	N = 99	%	N = 34	%
Gender						
Male	223	52.6%	52	52.5%	23	66.6%
Female	201	47.4%	47	47.5%	11	32.4%
Ethnicity						
Hispanic or Latino	5	1.2%	3	3.1%	0	0%
Non-Hispanic or Latino	405	98.8%	94	96.9%	32	100%
Race						
White	393	92.0%	91	91%	33	94.3%
African American	3	.7%	1	1%	1	2.9%
Asian	5	1.1%	0	0%	0	0
American Indian and Alaska Native	7	1.6%	1	1%	0	0
Other	19	4.4%	7	7%	1	2.8%
Highest Level of Education						
Some High School	1	.2%	0	0%	0	0%
High School Diploma	7	1.7%	0	0%	0	0%
Some College	57	13.5%	20	20.4%	5	15.2%
Two Year College or Technical Degree	32	7.6%	6	6.1%	1	3.0%
Four Year College Degree	127	30%	26	26.5%	11	33.3%
Some Graduate School	52	12.3%	19	19.4%	5	15.2%
Advanced Degree	147	34.8%	27	27.6%	11	33.3%
	Mean	SD	Mean	SD	Mean	SD
Age	44.5	15.18	47.6	16.59	51.1	18.61

Note: The total *N* varies by question because participants were free to leave blank any questions they wished.

Survey and Conversation Participants

The demographics of the online survey participants, those who indicated an interest in coming to the face-to-face community conversation, and those who actually came to the conversation are shown in Table 1. Overall, participants in the survey and the face-to-face event tended to be highly educated, with a majority holding at least a four-year

college degree and a plurality holding an advanced degree. Ethnic minorities tended to be underrepresented. For instance, Hispanics/Latinos account for approximately 6.2% of Lincoln's population but only 1.2% of online survey participants, while African Americans account for approximately 3.8% of Lincoln's population but only .7% of online survey participants. In addition, men were somewhat overrepresented, especially at the face-to-face event.

♦ ONLINE SURVEY

In addition to asking participants basic demographic questions, the online survey was designed to give policymakers input on three primary questions (see the Key Findings for the exact wording of the questions). One question pertained to residents' ***program priorities*** and focused on the types of energy programs that residents feel are most important. A second question focused on ***policy objectives*** and focused on the major reasons residents value energy programs. Finally, a third question pertained to ***willingness to invest*** and sought to determine how much residents are willing to pay for energy programs. Participants also were encouraged to give explanations and reasons for their rankings of the various program areas and policy objectives. In addition, a number of survey questions were designed to assess resident familiarity with and knowledge of current local energy programs, and participants were invited to write down questions that they had about the programs discussed on the survey. These questions (see Appendix A for a summary) were forwarded to the expert panelists who were to be present at the August 18th event. Finally, after completing the rest of the survey, participants were given the option to answer a series of questions regarding their knowledge of and attitudes towards climate change.

♦ BACKGROUND DOCUMENTS

Climate change has been a motivating factor behind much of the push towards new energy efficiency policies. Climate change has also proven an often divisive political issue. In an attempt to provide guidance to future policymakers looking to engage the public on issues related to energy and climate, participants in the community conversation were randomly assigned to one of three conditions regarding climate change information. Specifically, at the end of the survey, each participant who indicated an interest in attending the August 18th event was provided with a link to a downloadable background document containing information on local energy programs. The survey software randomly assigned one-third of the participants to receive locally-relevant information about current energy programs and nothing else. The other two-thirds received additional information on climate change communicated in one of two formats: a straight "newsletter" format similar to the rest of the information provided, or

imbedded in a personal narrative adapted from a longer piece of creative nonfiction.¹ Reminder e-mails which included links to the background document were sent to everyone who RSVP'd prior to the August 18th event. In addition, hard copies of the background documents were available at the face-to-face event.

♦ FACE-TO-FACE CONVERSATION

The August 18th face-to-face discussion was designed to supplement findings from the online survey with more in-depth observations from Lincoln residents. The attendees were randomly assigned to one of 6 small groups. Participants then completed a brief pre-event survey before beginning the day's activities. For example, the pre-survey asked participants where they had first heard about the event, what their familiarity was with the programs involved in the conversation, and for their opinions about the background documents. Participants were also asked to give their general impression of the information provided in the background document.

Next, participants gathered for a large group discussion with a panel of energy experts. The panel was moderated by Milo Mumgaard of Cleaner Greener Lincoln and included Nidhi Khanna of HDR Architecture, Chris Ford of the UNL College of Architecture, Marc Shkolnick of Lincoln Electric System, and Greg Shinaut of Black Hills Energy. Panelists provided brief comments, during which they talked about their work and had a chance to answer some of the questions raised by participants in the online survey. To encourage audience engagement, questions were posed to the audience during the discussion using interactive TurningPoint software. Conversation participants also were invited to ask questions of the panelists during this session.

Following the large group session, participants broke into their small groups to complete a series of tasks. During the small group exercises, expert panelists visited the groups to answer participant questions as they arose. The tasks, listed below, were designed to garner public input on several phases of program development.

- ***Identification of program barriers.*** First, participants were asked to consider barriers preventing Lincoln residents from investing in energy efficiency upgrades. This exercise was intended to identify areas where new programs may be needed or existing programs may be lacking.
- ***Discussion of policy objectives.*** Second, participants were asked to reflect on the broad policy objectives motivating local energy policy. This task built upon the online survey question and was designed to provide additional detail and depth to the survey results.
- ***Brainstorming funding sources.*** Finally, participants were asked to consider the various benefits and drawbacks of different sources of funding. This exercise was

¹ The purpose of the use of two formats was to see if there was value-added from embedding the information into a narrative with a storyline.

intended to determine whether any specific funding mechanism was preferred by residents.

The small group session was followed by lunch, during which some groups continued to discuss the small group topics. After lunch, there was another large group session in which participants reported back on their discussion results. At the end of the community conversation, participants completed a post-event survey upon which they could give their final reflections. Many of the questions on the post-event survey were the same as those on the online-survey, including how the participant would rate the importance of various energy programs and policy objectives, their general knowledge of energy and climate change issues, and their willingness to pay for energy efficiency in Lincoln. Additional questions asked participants to assess the quality of community conversation events, for instance whether they found the event worthwhile and whether they thought the conversation had any impact on their views regarding energy and climate policy. Both of the large group proceedings were aired on the city's Channel 5.

KEY FINDINGS

♦ PROGRAM PRIORITIES

What Are the Types of Programs Residents Feel Are Most Important?

On the online survey, participants were offered a brief description of five areas in which energy efficiency programs currently operate at the city and state level and asked to rank and rate these areas according to their importance. The following five program areas were presented to participants for their consideration (additional information, including examples of relevant programs, was also presented; see Appendix B for the full information provided):

- **Assistance to Low-Income Families:** These programs offer financial support to low-income families looking to improve the energy efficiency of their homes.
- **Encouraging Private Sector Efficiency:** These programs focus on encouraging private businesses and residents to use less energy.
- **Incentive Programs:** These programs offer financial incentives to purchase energy upgrades for residents and businesses.
- **Low-Interest Energy Loans:** These programs offer low-interest loans for the purchase of new energy improvements.
- **Upgrading City Assets:** These programs focus on reducing the City's energy use by making sure that City assets are energy efficient.

Participants were asked to rate each program area on a five-point scale from “Not important at all” (1) to “Very Important” (5). In addition, participants were asked to assign each area a rank from one (most important) to five (or six if they offered an “other” priority), indicating which they believe should have the highest priority.

As shown in Table 2, all of the programs were rated, on average, as more than somewhat to very important by the survey respondents. Examination of the mean ratings in the top portion of Table 3 shows that upgrading city assets and encouraging private sector efficiency were rated the highest (and not significantly different from one another), incentive programs were rated of middle importance, and low-interest energy loans and assistance to low-income families were rated as lowest of importance (and not significantly different from one another)² of the programs that had been listed on the survey.

One of the benefits of deliberative processes such as those used during the community conversation is that one can examine the impact of discussion and consultation with experts. The lower part of Table 2 shows the responses of the conversation participants at the end of the event. These participants already viewed the programs as more important than the general survey sample, so rather than comparing them to the general survey, we compared their post-conversation answers to what they had said when they answered the survey. As shown in the right columns of the bottom half of Table 2, the only importance rating that changed significantly for the conversation participants was their assessment of the importance of assisting low-income families. Conversation participants saw this program as less important after the discussion than before.

Table 3 shows the results that were obtained with participants were asked to rank order the programs. This procedure was designed to force participants to distinguish between programs that might be seen as close together in importance. When asked to rank order the programs, the apparent importance of upgrading city assets was still ranked near the top in importance. It was ranked slightly (but not significantly) less important than encouraging private sector efficiency. Similarly, both low interest loans and assistance to low-income families were ranked lowest, consistent with their ratings as least important. Meanwhile, the only significant change in rankings was a decrease in importance (increase in ranking) of the low-interest energy loans (rather than assistance to low-income families, which decreased in importance when ratings were examined). In summary, when pre-post ratings and rankings were examined, the only observed changes were with regard to the lowest rated programs, which became even less important to participants after discussion.

Participant Explanations for Program Priorities

Participants in the online survey were encouraged to provide reasons and explanations for their program rankings, and 198 participants did so. Some representative comments for each of the program categories are presented in Table 4. Many of the comments appeared to indicate that the primary considerations people used to decide on the relative worth of the programs included the following:

- *Program economics:* How much the programs cost or the money they would save

² Paired t-tests and $p < .05$ levels of significance were used to determine statistical significance of all differences in Table 4.

Table 2: Program Priorities (Ratings)

“Current activities concerning sustainable energy use in Lincoln can be broken down into a number of categories. Below are some of the main programs in Lincoln...For each program area, please indicate how important you think it is that programs such as these exist at the city level.”

Online Survey Results: Ratings

Program Area	Not Important at All (1)	A Little Important (2)	Somewhat Important (3)	Quite Important (4)	Very Important (5)	Average	Standard Deviation
Upgrading city assets	5%	5%	12%	31%	47%	4.10^b	1.10
Encouraging private sector efficiency	6%	5%	13%	29%	47%	4.04^b	1.17
Incentive programs	7%	4%	14%	36%	39%	3.95	1.15
Low-interest energy loans ^a	7%	5%	19%	33%	36%	3.84^c	1.18
Assistance to low-income families ^a	7%	8%	21%	29%	35%	3.77^c	1.21

Post-Conversation Survey Results

Program Area	Not important at all (1)	A little important (2)	Somewhat important (3)	Quite important (4)	Very important (5)	Average Change	SD change
Upgrading city assets	0%	9%	0%	38%	53%	-.16	.88
Encouraging private sector efficiency	0%	0%	6%	31%	63%	-.13	.71
Incentive programs	0%	0%	9%	31%	60%	+.16	.86
Low-interest energy loans ^a	0%	0%	13%	50%	37%	-.13	.75
Assistance to low-income families ^a	3%	6%	16%	28%	47%	-.47*	.98

Notes: N=456-460 for online survey, N=32, for community conversation frequencies, N=32 for change statistics. ^aPrograms used NEO programs as exemplars. ^{b-c} Indicate groups of means that do not differ significantly from one another. *p < .05 change between online and post.

Table 3: Program Priorities (Rankings)

“Below are the five categories representing current activities related to sustainable energy in Lincoln. To provide more detail on your priorities, please use your mouse and drag and drop them in order of MOST IMPORTANT to fund (list FIRST) to least important to fund (list last).”

Online Survey Results: Rankings

Policy Objective	Most Important (1)	(2)	(3)	(4)	Least Important (5)	Average	Standard Deviation
Encouraging Private Sector Efficiency	24%	26%	18%	18%	14%	2.71^b	1.38
Upgrading City Assets	39%	17%	17%	18%	18%	2.79^b	1.48
Incentive Programs	19%	20%	29%	18%	14%	2.89^b	1.30
Assistance to Low-Income Families ^a	17%	18%	20%	19%	26%	3.21^c	1.43
Low-Interest Energy Loans ^a	11%	20%	15%	27%	27%	3.39^c	1.36

Post-Conversation Survey Results

Policy Objective	Most Important (1)	(2)	(3)	(4)	Least Important (5)	Average Change	SD Change
Upgrading City Assets	24	16	16	24	20	+.68	1.50
Encouraging Private Sector Efficiency	36	24	16	12	12	-.73	1.41
Incentive Programs	28	24	20	24	4	-.36	1.26
Low-Interest Energy Loans ^a	0	12	28	28	32	+1.36*	1.04
Assistance to Low-Income Families ^a	8	20	16	24	32	-.68	1.36

Notes: N=388 for online survey, N=25, for community conversation frequencies, N=22 for change statistics. ^aPrograms used NEO programs as exemplars. ^{b-d} Indicate groups of means that do not differ significantly from one another. *p < .05 change between online and post.

- *Energy impacts*: How much energy the programs would save or how compatible they are with sustainability goals
- *Human impacts*: The number of people the programs would encourage or help save energy or improve efficiency
- *Governmental roles*: The extent to which the program was consistent with participants' views of the role of local government

It is also worth noting that different reasons appeared to relate to different program priorities. For example, reasons for upgrading city assets seemed especially related to perceptions of governmental roles related to energy efficiency. Encouraging private sector efficiency was perceived as especially likely to have an impact on city energy use. When considering incentive, loan, and assistance programs, people especially considered whether or not they felt the programs would have greater or lesser human impacts.

Table 4: Resident Reasons (PRO and CON) for Program Prioritizations

Upgrading City Assets:

- PRO: "Upgrading city assets is at the top because the city can make control the level of investment and can ensure the results, but it is only a small piece of what is needed" (government role)
- PRO: "City assets = tax payer dollars, if upgraded those dollars can go towards other city programs." (program economics)
- PRO: "City needs to lead by example." (government role)
- CON: "Upgrading city assets is important, but frankly, I'd like to see the city engage the people rather than simply fund building improvements that the average resident does not get to experience directly." (government role, human impact)

Encouraging Private Sector Efficiency:

- PRO: "The private sector is probably the largest contributor to energy consumption and greenhouse emissions overall." (energy impact)
- PRO: "Encouraging private sectors is a priority because as far as I know many residents aren't as efficient as they should be and it is more difficult to regulate, whereas city use can be regulated more easily." (energy impact)
- CON: "Private sector is at the bottom because I feel that business owners and homeowners have the right to choose how they run their business and household." (government role)
- CON: "Encouraging efficiency is nice, but not enough. It needs to be an active, hands-on program not just advertising and good words." (energy impact)

(Table 4 continued)

Incentive Programs:

- PRO: “No one wants to spend money if they don't have to but with an incentive, upgrading to energy efficiency would make economic sense.” (human impact)
- PRO: “Incentive programs would catch people's interest.” (human impact)
- PRO: “Unfortunately, it is not enough to simply ask people to 'do the right thing.' An economic incentive is the initial step and buffer to starting or continuing the dialogue of what/why/ and how these policies will be beneficial for the greater good.” (human impact)
- CON: “I do not approve of government subsidies.” (government role)

Low-Interest Energy Loans:

- PRO: “The low interest energy loans are GREAT for new and young homebuyers and gives incentive in the form of money to them!” (human impact)
- PRO: “Offering lower interest rates would make it even more appealing to everyone, not just low-income families.” (human impact)
- CON: “I ranked low interest energy loans last because all loans are currently quite low.”
- CON: “Loans aren't going to cut it, except to the business sector.”

Assistance to Low-Income Families:

- PRO: “Low-income families get hit with double whammies, inefficient systems are not comfortable for the inhabitants, wasteful of resources and the costs to merely survive are beyond their reach.” (human impact)
- PRO: “There are just too many families like mine that need help with the little things: like food, clothes, rent, housing, electric bill. It's the little things that make the families feel they can handle the rest.” (human impact)
- CON: “Since low-income families will indirectly benefit from lower energy costs due to city-wide renewable energy production, their energy bill will substantially decrease with time. As such, I would rank this goal with less importance than that of the other four which have a higher amount of mutual benefits if sought after.” (human impact not expected)
- CON: “I believe a larger impact can be made with in the private sector which is typically responsible for developing the properties that low-income families eventually own and use.” (energy impact)

General Comments:

- “Ranked from the cheapest to the most expensive for the Lincoln taxpayer.” (program economics)

(Table 4 continued)

- “I ranked programs in terms of which I think would have a greater impact on sustainability and energy conservation.” (energy impact)
 - “I ranked them in order of least harmful in terms of government interference.” (government role)
 - “My first two were chosen because I think they'll help a large number of people, not specific families.” (human impact)
 - “This is based on my very uninformed assessment of which programs would save the most energy.” (energy impact)
 - “All of these are important and need to part of a comprehensive energy efficiency strategy.” (energy impact)
 - “None of this is within the purview of government. NONE should receive funding.” (government role)
-

Perceived Program Barriers

To add some detail to resident perceptions of different programs, and to benefit the design of new energy programs in the future, participants in the community conversation were asked to discuss what barriers may prevent more people from participating in energy efficiency programs. The purpose of this exercise was to identify areas that may need additional attention from local policymakers. The main barriers identified were as follows:

- *Lack of public awareness.* For example, many of the participants at the community conversation noted that they had not heard of the energy programs before taking the survey. People who have not heard of programs, especially the incentive, loan, and assistance programs, cannot take advantage of them.
- *Startup costs are too high.* While improving energy efficiency may save money in the future, it can often require a substantial initial investment. Some households may not be able to absorb these startup costs without outside assistance.
- *Individuals feel too inconsequential.* Energy and climate change are global issues which many people feel powerless to affect. Individuals must feel empowered to make a difference in the world before they may be willing to make a change in their lives.
- *Old housing stock predates new energy building codes and requires retrofitting.* Much of Lincoln's energy use comes from a residential housing stock that predates recent building codes. Retrofitting these buildings may be more complicated and more costly than ensuring that new construction meets energy standards.
- *Ideological conflict regarding energy and climate change issues.* Energy and climate change have become politically divisive issues. Some individuals may feel reluctant to take action that is seen as controversial or provocative.
- *Lack of concrete policy goals.* Goals such as “reducing our dependence on foreign oil” and “curbing greenhouse gas emissions” may seem worthy, but they do not

provide much clear direction to the individuals participating in energy-efficiency programs. More specific benchmarks may be needed to spur effective action.

- *Lack of central authority over residential houses.* While local government has the power to improve publicly owned property by decree, no such authority exists for private residences. Each household is governed by its own members, and reaching these individuals presents a new challenge for local policymakers.
- *Conflicting incentives for rental properties.* Much of the residential housing stock is rented rather than owner-occupied, and these properties may lack the appropriate incentives to invest in energy efficiency.

This last barrier received attention from several groups and merits explanation. Many participants at the community conversation indicated that rental properties are less likely to participate in energy programs because landlords typically don't pay for energy use and tenants don't expect to reap the full rewards of a long-term investment in energy efficiency. This phenomenon has been identified in the economics literature as an example of the principal-agent problem and may be responsible for as much as 3.4 trillion BTU in excess energy usage nationally - equivalent to 35% of US residential energy consumption (Murtishaw and Sathaye, 2006).

♦ POLICY OBJECTIVES

What Are the Major Reasons Residents Value Energy Programs?

The second major goal of this study was to gain a better understanding of the objectives residents hoped energy programs would reach. Survey and community conversation participants were asked to rate and assign a ranking to five common policy objectives. In addition, they were invited to volunteer any other policy objective that they felt was important but not listed. The five policy objectives were as follows:

- Keeping my monthly electricity bill low
- Curbing greenhouse gas emissions
- Saving taxpayer money
- Reducing our dependence on foreign oil
- Helping low-income families

While these objectives can sometimes be pursued simultaneously, more often policymakers must choose between two conflicting goals, both of which are valued by their constituents.

Table 5 displays the mean importance ratings for both the online and face-to-face groups and shows that, for those participants who gave their input, the policies perceived as most important were reducing dependence on foreign oil, and curbing greenhouse gas emissions. Meanwhile, least important to this group was keeping one's own energy bills

Table 5: Policy Objectives (Ratings)

“There are many reasons why residents have expressed support for energy efficiency programs in Lincoln. Below is a list of five commonly cited goals of sustainable energy programs. Please rate them according to how important you think each objective is.”

Online Survey Results: Ratings

Policy Goal	Not Important at All (1)	A Little Important (2)	Somewhat Important (3)	Quite Important (4)	Very Important (5)	Average	Standard Deviation
Reducing our dependence on foreign oil	2%	8%	16%	25%	49%	4.11^b	1.08
Curbing greenhouse gas emissions	9%	7%	8%	16%	60%	4.11^b	1.32
Saving taxpayer money	3%	11%	25%	30%	31%	3.76	1.10
Keeping my monthly electricity bill low	3%	13%	30%	29%	25%	3.60^c	1.08
Helping low-income families	5%	15%	23%	32%	25%	3.56^c	1.17

Post-Conversation Survey Results: Ratings

Policy Goal	Not Important at All (1)	A Little Important (2)	Somewhat Important (3)	Quite Important (4)	Very Important (5)	Average Change	SD Change
Reducing our dependence on foreign oil	0%	16%	16%	16%	52%	-.20	1.17
Curbing greenhouse gas emissions	0%	4%	0%	18%	78%	0	0.66
Saving taxpayer money	8%	22%	22%	37%	11%	-.67*	1.16
Keeping my monthly electricity bill low	19%	26%	19%	18%	18%	-.41	1.41
Helping low-income families	0%	8%	15%	37%	40%	-.22	0.93

Note: N=426-428 for online survey, N=25-28, for community conversation frequencies, N=25-28 for change statistics.

^aPrograms used NEO programs as exemplars. ^{b-c} Indicate groups of means that do not differ significantly from one another.

*p < .05 change between online and post.

Table 6: Policy Objectives (Rankings)

“To provide more detail on your priorities, please use your mouse and drag and drop them in order of MOST IMPORTANT to fund (list FIRST) to least important to fund (list last).”

Online Survey Results

Policy Goal	Most Important (1)	(2)	(3)	(4)	(5)	Least Important (6)	Average	Standard Deviation
Curbing greenhouse gas emissions	47%	20%	8%	6%	15%	4%	2.36	1.65
Reducing our dependence on foreign oil	19%	31%	18%	18%	13%	1%	2.76	1.35
Saving taxpayer money	14%	14%	21%	25%	23%	3%	3.38^b	1.40
Helping low-income families	7%	15%	29%	26%	18%	5%	3.47^{bc}	1.27
Keeping my monthly electricity bill low	9%	16%	21%	22%	27%	5%	3.58^c	1.39

Post-Survey Results

Policy Goal	Most Important (1)	(2)	(3)	(4)	(5)	Least Important (6)	Average Change	SD Change
Curbing greenhouse gas emissions	67%	11%	11%	8%	3%	0	-.32	1.17
Reducing our dependence on foreign oil	11%	22%	33%	19%	15%	0	-.12	1.22
Saving taxpayer money	4%	8%	28%	24%	36%	0	+.57	1.16
Helping low-income families	0	52%	19%	14%	14%	0	+.08	1.14
Keeping my monthly electricity bill low	19%	7%	11%	30%	30%	3%	-.68*	1.55

Note: $N=401$ for online survey, $N=25-27$, for community conversation frequencies, $N=25$ for change statistics. ^aPrograms used NEO programs as exemplars. ^{b-c} Indicate groups of means that do not differ significantly from one another. * $p < .05$ change between online and post.

Table 7: Resident Reasons (PRO and CON) for Policy Objectives

Keeping My Monthly Electricity Bill Low:

- PRO: “All I want is for my taxes and electric bill to be low.”
- CON: “Big picture at the top, personal bills as the lowest.”
- CON: “I’m all for saving money, but not at the expense of reducing greenhouse gases.”
- CON: “Sadly, higher electric bills will encourage people to use less energy, when other motivations fail.”

Curbing Greenhouse Gas Emissions

- PRO: “Carbon Dioxide emissions are a long term problem that needs to be confronted today or else we will pay for our near sightedness in the decades to come.”
- PRO: “Greenhouse emission affect everyone in the world, not just the people in Lincoln or the US, so it's most important to reduce those first.”
- CON: “I am not convinced that manmade greenhouse gases leads to global warming, rather it is caused by solar activity.”
- CON: “Greenhouse emissions are not relevant to what the City of Lincoln does or does not do in an interdependent world economy.”

Saving Taxpayer Money

- PRO: “It is important for taxpayer money to be used efficiently and effectively.”
- PRO: “The city government has no business being involved in most energy efficiency but if there is something out there which will save taxpayer money the city should do it.”
- CON: “I am willing to pay money to save energy.”
- CON: “Saving taxpayer money is the least important - while it wins elections people need to be responsible. People expect things for nothing - grow up.”

Reducing Our Dependence on Foreign Oil

- PRO: “Continued dependence on foreign oil means continuing the huge expense of military forces needed to protect those sources.”
- PRO: “Foreign oil is destroying our economy and not forcing innovation in sciences etc, making us lag behind other nations and not be the tech leader we have been for half a century.”
- CON: “Reducing our dependence on foreign oil should be accomplished by drilling here.”
- CON: “Reducing dependence on foreign oil is important for world peace, but seems to me to be a longer-term and wishy-washy goal.”

(Table 7 continued)

Helping Low-Income Families

- PRO: “Low income families would have additional funds to pay for other necessities rather than an expensive energy bill or discomfort due to keeping the heat lower and possibly no a/c.”
 - PRO: “Low-income families have few choices. We all need to help those who are poor.”
 - CON: “Don’t take away from me to help low income. We all have the same opportunities to get ourselves out of low income.”
 - CON: Helping low-income families is already achieved by focusing on the other objectives. Therefore, it ought to be secondary to the cities bigger, greener plans.”
-

low and helping low-income families. These results were consistent across the rating and ranking results. Examination of changes in attitudes after the community conversation found that attendees at the community conversation were most likely to reduce the extent to which they felt it was important to save tax payers money (significantly reduced according to participant ratings) and increase the extent to which they thought it was important to keep their energy bills low (given a significantly higher ranking after the discussion).

Participants in the online survey were given the opportunity to specify any policy objective that was not otherwise considered. Among the reasons participants gave to support or oppose energy efficiency programs were:

- Preserving scarce resources
- Reducing environmental pollution
- Reducing our dependence on fossil fuels
- Keeping government out of private business
- Improving quality of life
- Setting an example for other communities
- Preserving the environment for future generations
- Reducing unemployment and providing economic stimulus
- Doing the “right thing”

As shown, many of these items seemed related to the five major policy objectives already listed. For example, reducing dependence on fossil fuels would also reduce dependence on foreign oil and reducing unemployment would help lower-income families. In addition, however, some of the other suggestions indicated an interest in indirect social-influence objectives, such as “setting an example for other communities.” In addition,

numerous comments again referenced the appropriate role for government (e.g., “keeping government out of private business”).

Participant Explanations for Policy Objectives

As with the ranking exercise for program areas, participants in the online survey were invited to provide an explanation for their rankings of policy objectives. This time, 136 participants offered explanations. Representative comments are presented in Table 7. The reasons given for policy objectives differed somewhat, but also overlapped, with the reasons given for program prioritization. Policy objectives might serve as the “reasons” for programs (e.g., belief in a program’s ability to meet the policy objective of curbing greenhouse gases may be a reason to support a given program). However, provision of reasons for the policy objectives requires looking even more deeply at one’s values and beliefs. Many of the reasons people offered fell into the following categories:

- Beliefs about the core causes of energy problems (e.g., whether or not manmade greenhouse gases were contributing significantly to global warming, and whether or not low-income persons will have more or less access to affordable energy if helped directly versus indirectly).
- Beliefs about the relative importance of different consequences (e.g., short and long-term economic and short- and long-term environmental consequences).
- Beliefs about human motivation (e.g., whether economic incentives and punishments, such as high energy prices, would change human behavior).
- Beliefs about the role of government (e.g., to regulate or incentivize private decisions about energy use).

♦ WILLINGNESS TO INVEST

How Much Are Residents Willing to Invest in Energy Programs?

Finally, survey participants were asked to consider whether and how much they would be willing to contribute to support local energy programs. Specifically, participants were asked “[h]ow important is it to you to continue the federally funded energy efficiency programs (in addition to those programs already supported by local organizations) after funding expires in 2013?” For this question, participants were offered the same five point scale from “very important” to “not important at all” that was used for the specific program areas. They were then asked, “[w]ould you be willing to pay some amount to support sustainable energy programs in Lincoln?”. Those who indicated “yes” they were willing to contribute were next asked to indicate “HOW MUCH you would be willing to pay MONTHLY to finance sustainable energy programs like the ones described earlier,” by moving a slider between \$0 and \$10. The following information was also provided to serve as an anchor: “Note: It has been estimated that it would cost approximately \$2.50 per household per month to continue running existing programs at current levels. Even higher contributions would be necessary if new programs were added or existing ones expanded.” These questions were designed to

give local policymakers information about the value of prospective programs as seen by the public.

As shown in Table 8, of those who completed the online survey, 75% were willing to pay, on average, more than double the likely cost of continuing the current energy programs. This is perhaps not surprising, as most of those completing the survey appeared to be doing so because they favored the idea of programs to foster future sustainable energy use. The willingness to pay for energy programs was even more extreme among those who attended the community conversation. Although conversation attendees appeared relatively similar in their willingness to pay prior to attending the event (\$5.27 was the average amount the conversation attendees were willing to pay when they completed the online survey, compared to an average of \$5.18 for the online respondents as an entire group), after the conversation they were willing to pay about \$14 per month for the programs.

Table 8: Willingness to Pay for Energy Programs

	Online Responses		Post-Survey Responses	
<u>Willing to pay?*</u>	<u>%</u>		<u>%</u>	
No	25		7	
Yes	75		93	
<u>How much will you pay?</u>	<u>Average</u>	<u>SD</u>	<u>Average</u>	<u>SD</u>
Conversation Attendees	\$5.27	\$2.92	\$14.84	\$10.81
All Available Responses	\$5.18	\$2.79	\$14.00	\$10.00

Notes: *Willing to pay for Post-survey responses determined by answers that were greater than \$0. Willing to pay: N=424 for online and N=29 for post-survey. How much will you pay?: Conversation attendees: N=19 for the within-group online versus post-survey results. All available responses: N=265 for online and N=29 for post-survey.

Potential Funding Mechanisms

As previously noted, those completing the survey and those attending the conversation were not representative of the Lincoln population, and thus it seems unlikely that their willingness to pay for such programs would necessarily generalize to Lincolniters as a whole. Thus, although they community conversation attendees did indicate willingness to pay, they were also asked to consider other funding mechanisms for local energy efficiency programs. In their small groups, they discussed the question:

“Do you have a preferred method of providing this [financial] support? Do you have any methods you would like to avoid?”

The purpose of this discussion was to determine whether participants felt more favorable towards any particular funding mechanism as opposed to any other. Participants were not given any specific examples of potential funding mechanisms so as not to influence their responses, but such mechanisms may include private donations, city taxes or higher electricity rates. This was the final exercise of the small group discussions and many groups found themselves short on time to discuss the pros and cons of various proposals. The following comments are meant to be representative of the first impressions of some Lincoln residents towards the problem of funding energy programs. A more thorough community conversation on this question may be necessary to provide more concrete guidance to local policymakers. The following are representative comments from the small group discussions:

- Have local utility provide a public metric of energy use (similar to that already provided for water use) to shame individuals into conserving more. This approach would cost very little.
- Implement a plan similar to Tax Increment Financing which may be called “Conservation Increment Financing.”
- Have individuals contribute in proportion to their energy consumption or greenhouse gas emissions.
- Focus on voluntary programs rather than mandates.
- Implement performance contracting standards, under which the savings from energy efficiency upgrade over time would be used to pay back the initial investment.
- Increase electricity rates.
- Use funding from gambling/casinos (as long as funding for other programs is unaffected).
- Solicit donations from concerned individuals.
- Funds must be earmarked for energy efficiency programs, and should not be diverted to other programs.

SUMMARY AND CONCLUSION

The present study provides a picture of the views and priorities of those residents in Lincoln who are interested enough in Lincoln’s future energy plans to give their input. While such individuals are only representative of a subgroup of Lincoln’s population, the methods used did allow more than 400 individuals to give their input, and complements other efforts, such as those used by Lincoln Electric System to obtain public input into citywide planning for sustainable energy provision. The current study revealed that, among those most concerned about energy planning, **support is strongest for programs that result in upgrading of city assets and encourage private sector efficiency.** In addition, residents appear to believe such programs are likely to be more effective at impacting city energy use and are more consistent with governmental roles

than programs that operate at more individual levels, such as provision of incentives for reduced energy use and provision of low-interest loans or assistance to low-income families. There appeared to be doubt among participants that these lower-valued programs would have as great of impacts on human behavior and energy use as the higher-valued programs.

Results also suggested that people varied in the policy objectives they wished the city to seek, but that **the most highly rated objectives pertained to reducing dependence on foreign oil, and curbing greenhouse gas emissions.** Thus, among those concerned and willing to give input on the future energy plans of the city, these are two of the most motivating values.

However, it is also important to note that **each of the programs and policy objectives on the survey were rated above 3.5 on the 1 to 5 rating scale,** indicating that those concerned with future energy plans did value all programs and objectives relatively highly. These values were further supported by participants' indicating a willingness to pay more than the estimated monthly cost per household to support such programs.

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APPENDIX A: QUESTIONS FROM RESIDENTS

♦ WHAT DO PEOPLE WANT TO KNOW?

Participants in the online survey were given an opportunity to present questions for policymakers and experts. Many of these questions were addressed by the expert panelists during the community conversation. Most questions fell into one of six categories, including:

- *Questions regarding current programs:* Many participants expressed an interest in having more information about current programs. For instance, some participants asked how current programs were performing and what methods are used to measure their success. Many questions focused on the “Upgrading City Assets” program area and asked whether current efforts included ideas already implemented by other communities. Some examples of these kinds of questions include:
 - **“How well did the Lincoln Energy Challenge program work out?** How are results measured? i.e. did the pledges make a noticeable difference?”
 - **“How many grants has the City awarded to low-income, moderate income and over income households** as of July 31, 2012. I would like this information before deciding whether to continue to fund or not.”
 - **“Are Lincoln Street Lights timed correctly** to reduce automobile emissions while idling at stop lights? “
 - **“What is the standard heating/cooling thermostat settings on Lincoln government offices** and are the thermostats locked down so office workers cannot change the settings?”
- *Questions regarding prospective programs:* Many participants volunteered ideas for new energy efficiency programs and wanted to know whether these ideas could be implemented at the city level. Some examples of these kinds of questions include:
 - **“Why doesn't LES utilize load controls** for residential users (water heater, air conditioner, etc.) during peak usage periods as some other utility providers do?”
 - **“How we are going to develop better curb cuts and bike-only lanes** not only in downtown but throughout the city?”
 - **“Why do we all pay the same dividend to the city no matter how much energy we use? Why isn't more of the cost associated with the amount of energy used instead of using a flat rate?”**
 - **“Does / could the city mandate a thermostat settings** such as 68 / 76 during winter / summer respectively?”

- *Questions regarding energy generation:* Although energy efficiency was the focus of the community conversation, many participants also had questions regarding sources for the city's energy generation. Some examples of these kinds of questions include:
 - "Why is LES not **using more wind energy**? They put some wind turbines in years ago but have not added any more. Why not?"
 - "**Natural gas** is abundant and currently in surplus. Is the city doing everything possible to utilize it in power production?"
 - "I understand the **public power is an obstacle to wind development**. Does the city have any incentive to push hard for wind?"
 - "Is the city of Lincoln interested in modernizing its municipal infrastructure via increasingly **lower-cost photovoltaics** or any renewable sources of energy production?"
- *Questions regarding funding:* Many participants had suggestions for or expressed concerns about the funding of local energy programs. Some examples of these kinds of questions include:
 - "Energy efficiency funds should themselves be spent efficiently. What's the **energy savings benefit per dollar spent** of what the city has planned?"
 - "Can we finance these programs by **REDUCING city expenditures in other areas**? If not, then maybe these programs can be funded by **foundation grants or private contributions**, NOT by additional tax dollars!"
 - "Can we **tax people that use more energy** - kind of like water usage - your rate goes up as you consume over threshold amounts. This might be a fair way of rewarding those who use less energy and ascribing a 'cost' to the environmental impact that is borne more heavily to those who cause more impact.
 - "How much money funded for these programs goes to **administrative costs** and how much goes towards helping individuals and businesses upgrade and increase energy efficiency?"
- *Questions regarding energy education:* Many participants wanted to know what local leaders were doing to ensure that the public was aware of energy efficiency programs. Some examples of these kinds of questions include:
 - "How can the importance of energy efficiency and sustainability be **better made known** to the public at large?"
 - "**I have not heard** about the reEnergize Program or the Dollar and Savings Energy Loans. What can the city of Lincoln do to communicate these programs to the citizens so that more people can learn of these opportunities?"

- “How can you make it **clear and obvious** to people that using less energy is the greatest savings?”
- “We need to know more about **all the issues.**”
- *Questions regarding the role of government:* Finally, many participants expressed skepticism about the proper role of government in providing energy efficiency assistance. Some examples of these kinds of questions include:
 - “Why not **defer to the private sector** to provide leadership and solutions rather than government bureaucracy?”
 - “Why exactly is government in the business of handing out the people's money? Wouldn't it be more efficient to **let people keep their money** and upgrade their property as they see fit, instead of passing it through a bureaucracy?”
 - “Government funded social programs and handouts to people & non-solvent businesses using taxpayer money in this economy is **not responsible government.**”
 - “Is the City prepared to fully involve conservative voters and business leaders in the development of sustainability programs? Or is the interest primarily in **appeasing liberal constituents?**”

APPENDIX B: BACKGROUND INFORMATION

The following information on local programs was included in each of the background documents as well as on the online survey:

Energy Programs in Lincoln and Nebraska

Current activities concerning sustainable energy use in Lincoln can be broken down into a number of categories.

- **Incentive Programs:** These programs offer financial incentives to purchase energy upgrades for residents and businesses.

One example of this type of program is the Sustainable Energy Program developed and administered by Lincoln Electric System (LES). This year, LES will spend a total of \$3 million helping customers to purchase high-efficiency heat pumps and air conditioners, improve home insulation, and retrofit commercial and industrial lighting fixtures.³ In addition, the American Recovery and Reinvestment Act provided a one-time federal grant to establish the reEnergize Program, a collaborative effort between Omaha and Lincoln that is expected to provide professional energy evaluations and upgrades to at least 700 residences in Lincoln by May 2013.⁴

- **Upgrading City Assets:** These programs focus on reducing the City's energy use by making sure that City assets are energy efficient.

As an example of programs that focus on upgrading City assets, Cleaner Greener Lincoln has spearheaded a comprehensive effort to improve the energy efficiency of government buildings and other assets.

These efforts included funding lighting upgrades for nine city buildings, upgrading city traffic lights to more efficient LED bulbs, and partnering with Black Hills Energy to develop new sustainable building standards for the city. Replacing city traffic lights alone saves the city approximately \$70,000 annually on energy costs.⁵

- **Encouraging Private Sector Efficiency:** These programs focus on encouraging private businesses and residents to use less energy.

³ You can read more at http://www.les.com/your_les/SEP/sustainable_energy_program.aspx

⁴ You can learn more about this program by visiting reenergizeprogram.org.

⁵ You can read more about Cleaner Greener Lincoln's efforts to upgrade City assets at <http://lincoln.ne.gov/city/mayor/energy/green-city.htm>

As an example of programs that encourage energy efficiency among private residents, the Lincoln Energy Challenge encouraged residents to take steps to cut down on their energy use. Nearly 2,000 residents participated in the 2011 Lincoln Energy Challenge, pledging actions that would reduce carbon dioxide emissions by over 500,000 lbs a year. ⁶ Cleaner Greener Lincoln has also stepped up to help thirteen non-profit buildings to purchase professional energy audits and provided significant lighting updates for eleven of the thirteen buildings.

- **Assistance to Low-Income Families:** These programs offer financial support to low-income families looking to improve the energy efficiency of their homes.

One example of this type of program is the Low-Income Weatherization Assistance Program which is currently overseen by the Nebraska Energy Office and funded by a Recover Act grant. Since receiving this grant in 2010, this program has helped weatherize more than 4,243 homes statewide, including 351 in Lancaster and Saunders counties. Homes at or below 200 percent of the federal poverty level qualify for the assistance in this program, which helps decrease the family's monthly energy budget while reducing demand on existing power plants. Federal funding for this program is set to expire in 2013. ⁷

- **Low-Interest Energy Loans:** These programs offer low-interest loans for the purchase of new energy improvements.

One example of this type of program is the Dollar and Energy Saving Loans program overseen by the Nebraska Energy Office. This program offers loans at subsidized interest rates of 2.5%, 3.5% and 5% for projects such as replacing appliances, installing new heating and cooling units, upgrading light fixtures and installing wind or solar cells for the production of renewable energy. ⁸

⁶ You can read more about Lincoln's Energy Challenge at <http://lincoln.ne.gov/city/mayor/energy/pledge.htm>

⁷ You can read more at <http://www.neo.ne.gov/wx/wxindex.htm>

⁸ You can read more at <http://www.neo.ne.gov/loan/index.html>



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